

Remarks

Upon entry of the foregoing amendment, claims 1-6, 8 and 10-12 are pending in the application, with claim 1 being the sole independent claim. Claim 7 was previously cancelled. Claim 9 is sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 6, 10 and 11 are withdrawn from consideration by the Examiner. Claim 1 is amended. Support for the amendment to claim 1 is found, *inter alia*, in originally filed claims 1 and 9. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

I. Supplemental Information Disclosure Statement

Applicants note that a Second Supplemental Information Disclosure Statement is submitted accompanying this Amendment and Reply. Applicants respectfully request the Examiner initial and return a copy of Information Disclosure Statement Forms.

II. Rejection under 35 U.S.C. § 103

Claims 1-5, 8, 9 and 12 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Turberg *et al.* (US 2005/0214336 A1, Int'l Appl. Pub. No. WO

2003/086075, published on October 23, 2003) ("Turberg"), in view of Hoffarth (U.S. Patent No. 5,705,476) ("Hoffarth")¹. Applicants respectfully traverse the rejection.

The cancellation of claim 9 renders the rejection of this claim moot.

Claim 1 as currently presented is directed to an oil-based suspension concentrate composition comprising, *inter alia*, specific amount of a compound of formula (I'), an alkanol alkoxylate penetrant of formula (Id) and other components. Each of claims 2-5, 8 and 12 depends from claim 1, and thus contains each and every limitation of claim 1.

As discussed in detail in Applicants' Amendment and Reply of December 17, 2009, Turberg generally discloses various formulations containing phenylketoenol derivatives of formula (I) for parasites control in animals. (Turberg, paras. 0160-0211.) However, Turberg does not disclose alkanol alkoxylates of formula (Id) as required by each of present claims 1-5, 8 and 12. In addition, Turberg does not teach using alkanol alkoxylates of formula (Id) as penetrants for compounds of formula (I') in plant applications.

Hoffarth does not cure the deficiency of Turberg. Hoffarth discloses low-foaming wetting agents consisting of a mixture of two or three different alkoxylated alcohols for formulating crop protection agents. (Hoffarth, claim 1 and col. 1, lines 10-16.) Even though Hoffarth discloses an alkoxylated alcohol of formula (Ia), which encompasses the penetrants of the formula (Id) of presently claimed compositions, Hoffarth is directed to

¹ Applicants note that U.S. Patent No. 5,705,476 is assigned to Bayer Aktiengesellschaft on its face, and is now owned by Bayer CropScience AG, the assignee of the captioned application.

the improvement of *wetting and anti-foaming* properties of formulations *in general*.

Hoffarth does not teach using alkanol alkoxylates of formula (Id) as penetrants for compounds of formula (I').

In making the rejection, the Examiner asserted that "wetting agents = penetrants = dispersing agents" (Office Action, page 4). Applicants respectfully disagree.

According to Handbook of Surfactants (Maurice R. Porter ed., Chapman and Hall, New York 1991), which is cited in the Second Supplemental Information Disclosure Statement submitted herewith:

When a drop of water is placed on a surface it can either spread over the surface, i.e., it 'wets' or form a stable drop, i.e., it does not 'wet'. Reduction in surface tension of water by a surfactant can make a non-wetting solution into a wetting solution on particular substrates.

(Handbook of Surfactants, page 34.) Thus, a wetting agent is used to reduce surface tension of a solution, and thus to make a non-wetting solution into a wetting solution on particular substrates, such as leaf surface of a plant. On the other hand, a penetrant aids an active substance (*e.g.*, a herbicide) to transfer from an external phase (*e.g.*, a leaf surface) into an internal phase (*e.g.*, within the leaf). According to Hull *et al.*, Adjuvants for Herbicides (The Weed Science Society of America 1982), which is also cited in the Second Supplemental Information Disclosure Statement submitted herewith:

There is likewise an "energy barrier" involved in the transfer of a herbicide from the external phase (the droplet on the leaf surface) to the internal phase within the leaf. The baseline values for these energy barriers are quite different for different herbicides, and are generally reduced upon the addition of a surfactant. . . .

Unfortunately, one cannot make the blanket statement that a reduction in surface tension of a formulation when a surfactant is added to it will invariably enhance retention and herbicidal activity.

(Adjuvants for Herbicides, pages 27 and 28.) Thus, contrary to the Examiner's assertion, a wetting agent is recognized by those of skilled in the art as being different than a penetrant.

As noted previously by Applicants, Applicants surprisingly discovered that an alkanol alkoxylate of formula (Id), when used as a penetrant in presently claimed compositions, not only improves the uptake of phenyl ketoenol compounds of the formula (I'), but also improves plant tolerance of compounds of the formula (I'). (See specification as filed, page 4, lines 11-15.) This effect was not known from Turberg or Hoffarth.

Furthermore, claim 1 as currently presented recites the amount of active compound, penetrant, vegetable oil, surfactant and optionally one or more additives. Even though Turberg generally discloses that the active compound in various formulations ranges from 1.0 to 40% by weight (Turberg, para. 0170), Turberg does not disclose, either generally or specifically, the amount of penetrant, vegetable oil, surfactant and optionally one or more additives, as recited in present claim 1. Yet, the Examiner alleged that "the skilled artisan would have expected these overlapping ranges to have had similar results, and the skilled artisan would have been motivated to optimize the active agent presence as is routine in the art." (Office Action, page 5.) In rendering the rejection, the Examiner appeared to be concerned with only the concentration of "the active agent," not other components recited in present claim 1. Applicants respectfully contend that to establish *prima facie* obviousness of a claimed invention, all claim limitations must be considered (*see* M.P.E.P. 2143.03).

In sum, Turberg and Hoffarth do not disclose or provide a reason for making the claimed compositions. Thus, claims 1-5, 8 and 12 are not *prima facie* obviousness over Turberg in view of Hoffarth.

Finally, as discussed in Applicants' Amendment and Reply of December 17, 2009, even assuming that a *prima facie* case of obviousness had been established, which it has not, the evidence of superior crop tolerance and efficacy of the claimed compositions, as compared to two reference compositions, rebuts any *prima facie* case of obviousness.

The Examiner has found the evidence insufficient allegedly because:

[T]he properties associated with the dispersant have not been shown to have a significance materially improving the overall pesticidal efficacy, attributed to the active agents rather than the additives, of the suspension concentrate.

(Office Action, page 7.) Applicants respectfully disagree.

As previously summarized by Applicants, the present specification includes Example I, a presently claimed composition and Comparative Examples I and II that contain the same ingredients as Example I, except for the penetrant. As shown in Tables 1-4 of the specification, Example I causes much less damage to the crops tested (better crop tolerance), as compared to Comparative Examples I and II. Furthermore, as shown in Table 5 of the specification, Example I demonstrates much higher insecticidal efficacies against *Aphis gossypii* and *Myzus persicae*, as compared to Comparative Examples I and II.

For the purpose of clarification, and to further facilitate the Examiner's understanding of the evidence of non-obviousness presented in the specification, Applicants herein summarize the compositions of Example I, and Comparative Examples I and II in following Table A. The compositions appearing in Table A are found in the specification as filed, at pages 18-20.

Table A. Summary of Compositions of Example I and Comparative Examples I and II

	Example I (g)	Comparative Example I (g)	Comparative Example II (g)
Compound of the formula (I''-4) (active agent)	100.0	100.0	100.0
Polyoxyethylene-sorbital oleate	100.0	100.0	100.0
Mixture of polyalkoxylated alcohols (Atlox 4894)	70.0	80.0	80.0
Lignin sulphonate (Borresperse NA)	30.0	20.0	20.0
Polydimethylsiloxane	0.5	0.5	0.5
Anhydrous citric acid	2.0	2.0	2.0
2,6-di-tert-butyl-4-methylphenol	2.0	2.0	2.0
Sunflower oil	450.0	450.0	450.0
Alkanol alkoxylate of formula (Id-1) (penetrant according to the present invention)	250.0		
Compound RO(EO)₈(PO)₄H (wetting agent of formula (Ib) according to Hoffarth)		250.0	
Compound C₁₃H₂₇O(EO)₁₀H (wetting agent of formula (Ia) according to Hoffarth)			250.0

As shown above, Example I and Comparative Examples I and II used the same ingredients except for the penetrant. Example I used a penetrant of formula (Id), whereas Comparative Examples I and II used Hoffarth's wetting agents.

In addition, for the purpose of clarification, and to further facilitate the Examiner's understanding of the evidence of non-obviousness presented in the specification, Applicants herein summarize the superior crop tolerance of Example I as compared to Comparative Examples I and II in following Tables B and C. The data appearing in Tables B and C is found in the specification as filed, at pages 20 and 21.

Table B. Crop Tolerance: Damage to the New Growth (%) 7 Days After Applications

	Bean	Cucumber	Soya
Example I	0	5	0
Comparative Example I	0	40	10
Example I	0	5	0
Comparative Example II	10	40	0

Table C. Crop Tolerance: Damage to the New Growth (%) 14 Days After Applications

	Bean	Cucumber	Soya
Example I	0	0	0
Comparative Example I	5	50	5
Example I	0	0	0
Comparative Example II	20	70	10

As shown above, presently claimed composition (Example I) causes much less damage to the crops tested (better crop tolerance), as compared to Comparative Examples I and II. The improvement of crop tolerance is attributed to the penetrant of presently claimed composition, not the active agent.

Furthermore, for the purpose of clarification, and to further facilitate the Examiner's understanding of the evidence of non-obviousness presented in the specification, Applicants herein summarize the superior efficacy of Example I as compared to Comparative Examples I and II in following Table D. The data appearing in Table D is found in the specification as filed, at page 21.

Table D. Efficacy in Comparison to the Untreated Control 5 Days After Applications

	Cotton infected by <i>Aphis gossypii</i>	Cabbage infected by <i>Myzus persicae</i>
Example I	93	83
Comparative Example I	70	70
Comparative Example II	77	53

As shown above, presently claimed composition (Example I) has much greater efficacy in treating crops infected by *Aphis gossypii* and *Myzus persicae*, as compared to Comparative Examples I and II. The improvement of efficacy is attributed the penetrant of presently claimed composition, not the active agent.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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